

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of Keogh

Atty. Ref.: 63511-9043-00;

Confirmation No. 4717

TC/A.U. 1761

Appl. No. 09/889,019

Examiner: Thuy Tran Lien

Filed: 30 November 2001

For: PROCESS FOR PRODUCING A FOODSTUFF

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Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION**

I, Stephen Dunn, hereby declare and state that:

1. I reside at 806/5 City View Road, Pennant Hills NSW 2120 Australia
2. I am Managing Director of Specialty Cereals Pty Limited, an Australian Company, and have worked in the food industry for thirty five years. I am a qualified Mechanical Engineer having graduated from the University of Sydney in 1972. I have worked closely with extrusion processing since 1993 when Specialty Cereals installed it's first twin screw extruder and during the past fourteen years have been involved in the development of many innovative products and processes based on extrusion technology. In 2005, Specialty Cereals was awarded a Food Innovation Grant by the Australian Government to assist in the development of a new extrusion process that will

lead to the manufacture of a unique food product. This is a project of Specialty Cereals with the close involvement of Food Science Australia (a division of the CSIRO) and the National Centre of Excellence in Functional Foods at the University of Wollongong

3. I know the inventor Keogh through involvement in the development and evaluation of co-extruded products on a project basis for Cadbury Schweppes. I have had business dealings with the Assignee Company Cadbury Schweppes PLC or its associated companies, but am not affiliated with them in any way .

4. I was asked by inventor Keogh at the request of the Attorney of record to comment on my interpretation of US 4,744,993 ("Bisson") and in particular the nature of the extrusion process disclosed therein. My comments are set out below:-

- A. After extraction of the casein, the product is extruded under controlled temperature & pressure conditions.
- B. The extrudate is cut at the die by a rotating cutter.
- C. The product exiting the extruder die does so directly into a sub-atmospheric environment or expansion chamber, where the product expands & dries due to the negative pressure of the chamber.
- D. The product is conveyed within the sub-atmospheric chamber, by the use of a vibratory baseplate, to an exit airlock. This exit airlock is not fully described, but is presumably a rotary valve or similar.

5. Subsequent to providing the above comment, I was asked to consider whether the extrusion process in Bisson might be interpreted such that extrusion is into an atmospheric pressure region with subsequent passage through the sub-atmospheric

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environment/chamber. In my view this is highly improbable because the actual description states (col. 3, l.35-42):

*"The strand issuing from the nozzle may be cut up, for example, by means of a rotary cutter. Particles resembling rodlets, pellets or chips may be obtained, depending on the rotational speed of the cutter and its proximity to the nozzles bores. **The particles thus obtained drop to the bottom of the puffing enclosure**, for example, onto a vibrating baseplate, and may be conveyed through an airlock."*

This wording clearly implies that the extrudate passes directly into the expansion chamber operating at sub-atmospheric pressure. Whilst there is a later reference to the extruder strand being discharged into a space where atmospheric pressure prevails, it is clear to me that the operating conditions required for the unique puffing process could not be maintained in this situation and a different, denser product would result. This is further supported by the earlier wording that states (Col. 3 l.23-27):

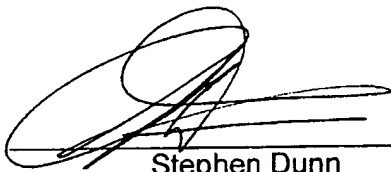
*"Under the effect of decompression, part of the water present in the material, i.e., around 40 to 50%, is evaporated while its temperature suddenly falls which causes its puffing and the rigidification of the cellular structure."*

If the extrudate is passed into atmospheric conditions, there is a degree of decompression occurring as the pressure built up through the die (nozzle) is released. This will result in some expansion and also some product cooling due to the evaporation of some of the product moisture. These phenomena are not unique to this process and are the basis for pretty much all conventional extrusion processes. However, to achieve a reduction of 40 to 50% of the water present in the material and to achieve significant puffing, in my view, could only result from passing the extrudate directly into a sub-

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atmospheric chamber taking advantage of the initial product temperature as it exits the die and accentuating the differential pressure to achieve the level of expansion required.

I declare that all statements herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

  
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Stephen Dunn

\_\_\_\_\_ 4 January 2007 \_\_\_\_\_